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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(60) Parent Application or Grant SONY ELECTRONICS INC. [/]; O. GIOSCIA, Richard [/]; O. SONODA, Yumi [/]; O. ZOELS, Jan-Christoph [/]; O. KANANEN, Ronald, P. ; O.		

(54) Title: METHOD AND APPARATUS FOR COMMERCIAL DISTRIBUTION AND PERFORMANCE OF RECORDED MUSIC  
(54) Titre: PROCEDE ET APPAREIL DE DISTRIBUTION COMMERCIALE ET DE REPRODUCTION DE MUSIQUE  
ENREGISTREE

## (57) Abstract

A network of kiosks (101) each contain a database (108) of digital music recordings. Using a display device (105) and a user input device (106) on each kiosk (101), a purchaser can see a listing of the music recordings available in the database (108) and select a recording to be downloaded. The selected recording is transmitted, preferably wirelessly, to a personal music device (103) worn on the wrist or clipped to the clothing of the purchaser. The purchaser pays for the recording. The personal music device (103) can then immediately retrieve and play the recording, preferably through headphones connected (112) to the personal music device (103).

## (57) Abrégé

L'invention concerne un réseau de terminaux interactifs (101), chaque terminal contenant une base de données (108) d'enregistrements numériques de musique. Grâce à un afficheur (105) et à un périphérique d'entrée utilisateur (106) placés sur chaque terminal (101), un acheteur peut visualiser une liste d'enregistrements musicaux disponibles dans la base de données (108) et sélectionner un enregistrement à télécharger. L'enregistrement sélectionné est transmis, de préférence par radiofréquence, à un dispositif de musique personnel (103) porté sur la taille ou accroché à un vêtement de l'acheteur. Ce dernier paie l'enregistrement une fois terminée l'opération. Le dispositif de musique personnel (103) peut récupérer immédiatement l'enregistrement et le reproduire, de préférence, par le biais d'écouteurs connectés (112) au dispositif de musique personnel (103).

PCT

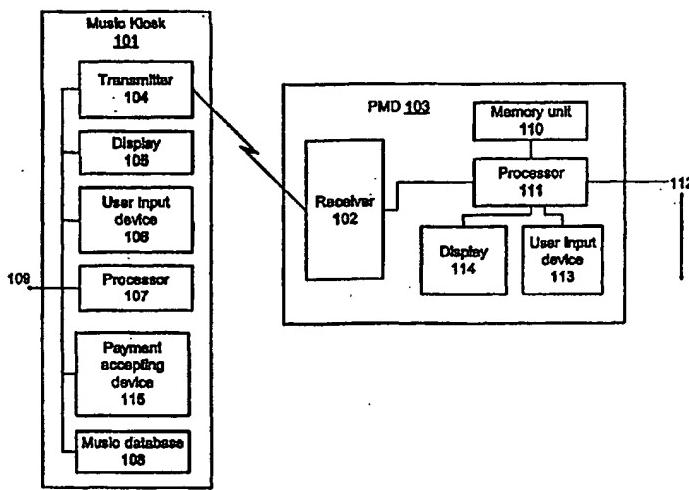
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(54) Title: METHOD AND APPARATUS FOR COMMERCIAL DISTRIBUTION AND PERFORMANCE OF RECORDED MUSIC



(57) Abstract

A network of kiosks (101) each contain a database (108) of digital music recordings. Using a display device (105) and a user input device (106) on each kiosk (101), a purchaser can see a listing of the music recordings available in the database (108) and select a recording to be downloaded. The selected recording is transmitted, preferably wirelessly, to a personal music device (103) worn on the wrist or clipped to the clothing of the purchaser. The purchaser pays for the recording. The personal music device (103) can then immediately retrieve and play the recording, preferably through headphones connected (112) to the personal music device (103).

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TITLE OF THE INVENTION

10                   **Method and Apparatus for Commercial Distribution and**  
5                   **Performance of Recorded Music**

FIELD OF THE INVENTION

15                   The present invention relates to the field of  
commercial music sales and distribution. The present  
10                  invention also relates to personal music devices for  
storing and playing recorded music. More specifically,  
20                  the present invention relates to a system of publicly  
available terminals or kiosks that can download digital  
music recordings into personal music devices for storage  
15                  and performance.

BACKGROUND OF THE INVENTION

25                   Traditionally, music is commercially distributed  
through a relatively narrow trade channel. Once the  
20                  music is recorded, it is distributed to radio stations.  
The radio stations then broadcast the music publicly. In  
this way, the radio station's broadcast has a content  
that will draw listeners and, therefore, advertising  
revenue.

35                   Additionally, the music broadcast by the radio  
station becomes known to the public. Those who  
particularly enjoy the music will then seek to purchase a  
recording of it.

40                   Recordings of musical works are typically sold in  
30                  retail stores or, alternatively, through catalogs and  
mail orders. The music is recorded on a physical data  
storage device such as a digital compact disc (CD) or a  
45                  cassette tape. The disc or tape with the recordings  
desired by a purchaser is identified or selected at a  
35                  retail outlet and purchased.

50                   After an interested listener has purchased the  
recording, that listener can hear a performance of the

- 5                   music anytime it is desired by playing the disc or tape  
on a disc or tape player. Disc players are now  
frequently provided in automobiles and computers.
- 10                  Additionally, disc players may be part of a large home  
5                  stereo system or a portable personal stereo device.
- 15                  Historically, music stores and mail order services  
were the sole methods for the commercial distribution and  
sale of musical recordings. However, with the advent of  
the compact disc and digital recording, the data
- 20                  10               composing a musical recording is no different from any  
other digital data and can be copied and transmitted  
electronically, for example, over phone lines and  
computer networks such as the internet.
- 25                  With this advance, a purchaser can preview or listen  
15                to musical recordings with a computer. It is even  
possible to download music from the internet which is  
then performed as a live bit-stream or stored and played  
by the listener's computer on command. If the listener  
has, for example, a writeable CD drive connected to his
- 30                  20               or her computer, the downloaded music may be optically  
recorded on a blank compact disc that can then be used as  
any other compact disc purchased from a retail outlet.
- 35                  While music can be distributed and even sold over a  
computer network such as the internet, such a system  
25                still requires that the purchaser use his or her computer  
to connect to the network to access and download musical  
recordings. This necessarily limits the distribution of  
music electronically. There are many instances in which  
40                a listener, who is away from his or her computer and  
30                internet connection, may wish to obtain a musical  
recording for immediate performance.
- 45                  Consequently, there is a need in the art for a  
method and apparatus that takes advantage of the ability  
to transmit and copy music digitally to make music more  
35                widely and easily distributed without requiring a user to  
visit a music store or connect via computer from home or  
50                office to the internet or other computer network.

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SUMMARY OF THE INVENTION

Consequently, it is an object of the present invention to meet the above-described needs and others.

- 10 5 Specifically, it is an object of the present invention to provide a method and system in which music recordings can be downloaded from publicly available terminals into personal music devices for immediate storage and performance.
- 15 10 Additional objects, advantages and novel features of the invention will be set forth in the description which follows or may be learned by those skilled in the art through reading these materials or practicing the invention. The objects and advantages of the invention 20 15 may be achieved through the means recited in the attached claims.

25 To achieve the stated and other objects, the present invention may be embodied and described as a method of commercially distributing musical recordings by

- 30 20 downloading a digital recording of music from a kiosk to a self-contained personal music device which stores the recording in an electronic memory and can play the music recording. Preferably, the downloading is accomplished wirelessly.

- 35 25 The method of the present invention may also include the steps of reviewing a listing of the music recordings which are available for download on a display of the kiosk; and selecting a music recording for download from the listing. The selection is performed with a user 40 30 input device on the kiosk. The downloading of the music recording is initiated in response to the selecting of the recording by the purchaser.

- 45 Additionally, the method of the present invention may include receiving payment for the downloading of the 35 50 music recording. Once the download to the personal music device is completed, the method may include retrieving the music recording from the electronic memory; and

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transducing the music recording into audible sound with the personal music device.

For carrying out the foregoing method, the present invention also encompasses a self-contained personal

5 music device having a receiver for receiving a download  
of a digital music recording; an electronic memory unit  
for storing the digital music recording; and a processor  
for accessing the recording in the memory unit and  
outputting an audio signal which can be transduced into  
10 audible sound.

Preferably, the receiver is a wireless receiver for receiving the download of a digital music recording wirelessly. The personal music device of the present invention also preferably includes a port for receiving a jack of a pair of headphones, the audio signal being output through the port.

The personal music device is preferably worn by the user. For example, the personal music device of the present invention may include a wristband and may be sized to be worn on a human wrist. Alternatively, the personal music device of the present invention may include a clip for clipping the device to a user's clothing.

The personal music device of the present invention  
25 may also include a user input device with which a user  
can control the processor to selectively access or  
process music recordings in the memory unit. To monitor  
the processor and the instructions input with the user  
input device, the personal music device of the present  
30 invention may include a display device.

The present invention also encompasses a kiosk for dispensing digital music recordings to personal music devices. The kiosk may include a music database containing at least one digital music recording; and a transmitter for transmitting a digital music recording from the database. Preferably, the transmitter is a

5 wireless transmitter for wirelessly transmitting the music recording to the personal music device.

10 The kiosk of the present invention also preferably includes a payment receiving device for receiving payment 10 for transmitting the digital music recording. A display device of the kiosk is driven by a processor. The processor may provide a listing of the music recordings 15 in the database on the display device. A user input device connected to the processor allows a user to 20 control the displayed listing of music recordings and to select a music recording from the listing to be transmitted by the transmitter.

20 Preferably the kiosk of the present invention also includes an external connection through which music 15 recordings can be remotely added to or deleted from the database. Moreover, the kiosk of the present invention 25 is preferably one of a network of kiosks which are provided in publicly accessible locations where people frequently listen to music through personal music 30 devices.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate the present invention and are a part of the specification. Together 35 25 with the following description, the drawings demonstrate and explain the principles of the present invention.

40 Fig. 1 is block diagram of a music kiosk and personal music device ("PMD") of the present invention.

45 Fig. 2 is a diagram of a first embodiment of the 30 personal music device according to the present invention.

Fig. 3 is a diagram of a second embodiment of the 45 personal music device according to the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

35 The present invention may be embodied in a system of 50 publicly available terminals or kiosks at which a user may purchase and download a digital musical recording.

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The recording is preferably stored in a compact, personal music playing device that is portable and can be used to perform the downloaded music immediately, preferably with the use of headphones.

Such kiosks can be fully automated like a conventional vending machine and can, therefore, be widely placed in those areas where people frequently listen to music, particularly with personal stereo systems. For this discussion, personal stereo systems are, for example, compact tape or disc players that include headphones through which the user listens to the music.

For example, a music kiosk according to the present invention could be provided in a fitness or health club where patrons typically listen to music with personal stereo systems while exercising. Patrons of such a club may frequently wish to obtain a new recording to listen to during a workout. Additionally, a music kiosk according to the present invention could be provided at recreational facilities such as ski resorts, beaches, spas, public parks, amusement parks, etc. where patrons may be listening to music with personal stereo systems.

A music kiosk according to the present invention may also be placed in transportation systems such as airports and train or bus terminals. Music kiosks according to the present invention may even be placed on vehicles such as airplanes, trains, ships, etc. In short, anywhere people might want to listen to music through a personal stereo system.

A music kiosk or terminal 101 of the present invention is illustrated in Fig. 1. The kiosk 101 includes, for example, a processor 107 that drives a display device 105. The processor is controlled with a user input device 106. The display 105 and input device 106 are used by someone wishing to identify a musical selection that he or she wishes to purchase. By operating the input device 106, the user may scroll

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5 through a listing of the music available through the kiosk 101. This listing is displayed on the display 105. The user also uses the input device 106 to select or indicate the music he or she wishes to purchase.

10 5 The user input device 106 may be any of a number of equivalent devices. For example, the user input device 106 may be an alphanumeric keyboard, a trackball with a selection button, a joystick with a selection button, etc. Any device which can be used by the user to  
15 10 navigate through a listing of musical works on the display 105 and indicate a selection from among the listings would be considered an equivalent user input device for purposes of the present invention.

20 15 Similarly, the display device 105 may be any device 25 on which a listing of the music available can be displayed. Examples include a liquid crystal display (LCD), an electro-luminescent or FED display or a cathode ray tube (CRT). The listing of the music may be printed or displayed text, pictures or icons representing the 30 music available, or a combination of the two.

35 20 Once music has been selected for download, the purchaser may then insert cash or a credit card to pay for the music. The payment accepting device 115 can be made to accept cash, credit cards or both.

40 25 Alternatively, the user may input a subscription or billing identification and be billed later for the music being downloaded.

45 30 When a selection has been made and paid for, the selected music is downloaded from the kiosk into a personal music device of the present invention. The personal music device ("PMD") of the present invention is preferably very compact so as to be easy to carry and use in virtually any location.

50 35 As shown in Fig. 1, the PMD 103 of the present invention includes a receiver 102 for receiving the download of a musical recording from the kiosk. The kiosk will transmit the music being downloaded

5 electronically with a transmitter 104. Once the music is received, the PDM stores the recording in a digital memory unit 110.

10 5 The transmitter 104 of the kiosk 101 and the receiver 102 of the PMD may be any of a number of equivalent electronic communication devices under the principles of the present invention. For example, the receiver 102 may include a terminal or port to which a wire from the transmitter 104 of the kiosk 101 may be connected. The music may then be downloaded from the kiosk 101 to the PMD 103 over the wireline connection.

15 20 Alternatively and preferably, the connection between the transmitter 104 and the receiver 102 is wireless. For example, the transmitter 104 may be a light source, and receiver 102 may be a light detector, e.g. infrared. 25 Alternatively, the transmitter 104 may be an acoustic signaller, and receiver 102 may be an acoustic receiver, e.g. ultrasonic. Finally, transmitter 104 and receiver 102 may both be a radio antenna for wireless transmitting 30 musical recordings with a radio frequency signal.

35 30 A processor 111 of the PMD 101, which is controlled by a user input device 113, accesses the music in memory 110 to perform the recording. Preferably, the user input device 113 is a keypad with buttons for retrieving and 35 40 playing music, moving fast forward or in reverse through a musical piece, skipping between musical tracks, adjusting volume, etc. In addition to a keypad, any other user input device capable of giving similar commands to the processor 111 would be equivalent in the 45 50 present invention.

45 30 A display 114 may also be provided on the PMD 103. The display device 114 would preferably be an LCD on which may be displayed information such as a designation of the musical recording being performed or the action 35 40 being taken, e.g. fast forward, track skipping, etc.

50 While the PMD 103 might include a speaker for performance of the musical recordings, due to the size

5 constraints of the PMD, a speaker producing music of sufficient quality and volume would be difficult to provide. Therefore, the PMD 103 preferably includes a  
10 jack or terminal 112 to which headphones (not shown) may be connected. With headphones connected to the processor 111, the music recordings in memory unit 110 can be transduced into high quality, audible music.

15 As shown in Figs. 2 and 3, the PMD of the present invention may be embodied in a number of different devices. For example, as shown in Fig. 2, the PMD of the present invention includes a clip 201 with which it can be clipped to a belt or other clothing of the wearer. As will be appreciated by those skilled in the art, many equivalent clip designs and configurations could 20 equivalently be used to accomplish the present invention.  
25 A jack 202 is also provided to which headphones (not shown) may be connected.

30 Alternatively, as shown in Fig. 3, the PMD may include a wristband so as to be worn like a wristwatch. The PMD may also be provided on an armband. A jack 202 is also provided to which headphones (not shown) may be 35 connected to the PMD 103. Alternatively, wireless headphones may be used.

40 The music available at the kiosks of the present invention may be provided to the kiosks in a number of ways under the principles of the present invention. For example, the kiosks may be visited and regularly serviced to provide new or additional musical recordings for patrons.

45 30 Alternatively, as shown in Fig. 1, the kiosks may have a connection 109 which is a dedicated cable network, a wireless local or long-distance telephone service or a connection to public phones lines with which the kiosk 101 can communicate with a central facility (not shown).  
50 35 Over this connection 109, the central facility can periodically and electronically communicate with the kiosk 101 to update the music available. The music

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available from the kiosk 101 is stored in a music database 108.

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While the present invention has been described as a method and device for distributing musical works, the present invention may also be used to distribute other audio files. For example, the present invention may be employed as described above to distribute or vend audio news clips describing current events, audio books, or any other audio recording. The only constraints on the size of the audio files distributed are the size of the memory in the personal music device and the time required to download the audio file.

20

The preceding description has been presented only to illustrate and describe the invention. It is not intended to be exhaustive or to limit the invention to any precise form disclosed. Many modifications and variations are possible in light of the above teaching.

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The preferred embodiment was chosen and described in order to best explain the principles of the invention and its practical application. The preceding description is intended to enable others skilled in the art to best utilize the invention in various embodiments and with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims.

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WHAT IS CLAIMED IS:

10           1. A method of commercially distributing musical  
5 recordings comprising downloading a digital recording of  
music from a kiosk (101) to a self-contained personal  
music device (103) which stores the recording in an  
electronic memory (110) and can play the music recording.  
15

10           2. A method as claimed in claim 1, wherein said  
20 downloading comprises wirelessly downloading said digital  
recording of music.

15           3. A method as claimed in claim 1, further  
25 comprising:  
               reviewing a listing of music recordings which are  
available for download on a display (105) of said kiosk  
(101); and  
30           20 selecting a music recording for download from said  
listing, said selecting being performed with a user input  
device (106) on said kiosk (101);  
               wherein said downloading is initiated in response to  
35           35 said selecting.

25           4. A method as claimed in claim 1, further  
               comprising receiving payment (115) for said downloading  
of said music recording.

40           30       5. A method as claimed in claim 1, further  
               comprising:  
               retrieving said music recording from said electronic  
45           45 memory (110); and  
               transducing said music recording into audible sound  
35           35 with said personal music device (103).

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6. A self-contained personal music device comprising,  
a receiver (102) for receiving a download of a  
digital music recording;  
5 an electronic memory unit (110) for storing said  
digital music recording; and  
10 a processor (111) for accessing said recording in  
said memory unit (110) and outputting an audio signal  
15 which can be transduced into audible sound.

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10 7. A device as claimed in claim 6, wherein said  
receiver (102) is a wireless receiver for receiving said  
download of a digital music recording wirelessly.

15

15 8. A device as claimed in claim 6, further  
comprising a port (112) for receiving a jack of a pair of  
headphones, said audio signal being output through said  
port (112).

20

20 9. A device as claimed in claim 6, wherein said  
personal music device (103) further comprises a wristband  
(301), said personal music device (103) being sized to be  
worn on a human wrist.

25

35 25 10. A. device as claimed in claim 6, wherein said  
personal music device (103) further comprises a clip  
(201) for clipping said device to a user's clothing.

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40 11. A. device as claimed in claim 6, further  
30 comprising a user input device (113) with which a user  
can control said processor (111) to selectively access or  
process music recordings in said memory unit (110).

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35 12. A. device as claimed in claim 6, further  
comprising a display device (114).

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13. At least one kiosk (101) for dispensing digital music recordings to personal music devices (103), said at least one kiosk (101) comprising:

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5 digital music recording; and  
a transmitter (104) for transmitting a digital music recording from said database (108).

15

14. A kiosk as claimed in claim 13, wherein said transmitter (104) is a wireless transmitter for wirelessly transmitting said music recording to said personal music device (103).

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15. A kiosk as claimed in claim 13, further comprising a payment receiving device (115) for receiving payment for transmitting said digital music recording.

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16. A kiosk as claimed in claim 13, further comprising a display device (105) driven by a processor (107), wherein said processor (107) displays a listing of the music recordings in said database (108) on said display device (105).

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25 comprising a user input device (106) connected to said processor (107), wherein said user input device (106) can be used to control said displayed listing of music recordings and to select a music recording from said listing to be transmitted by said transmitter (104).

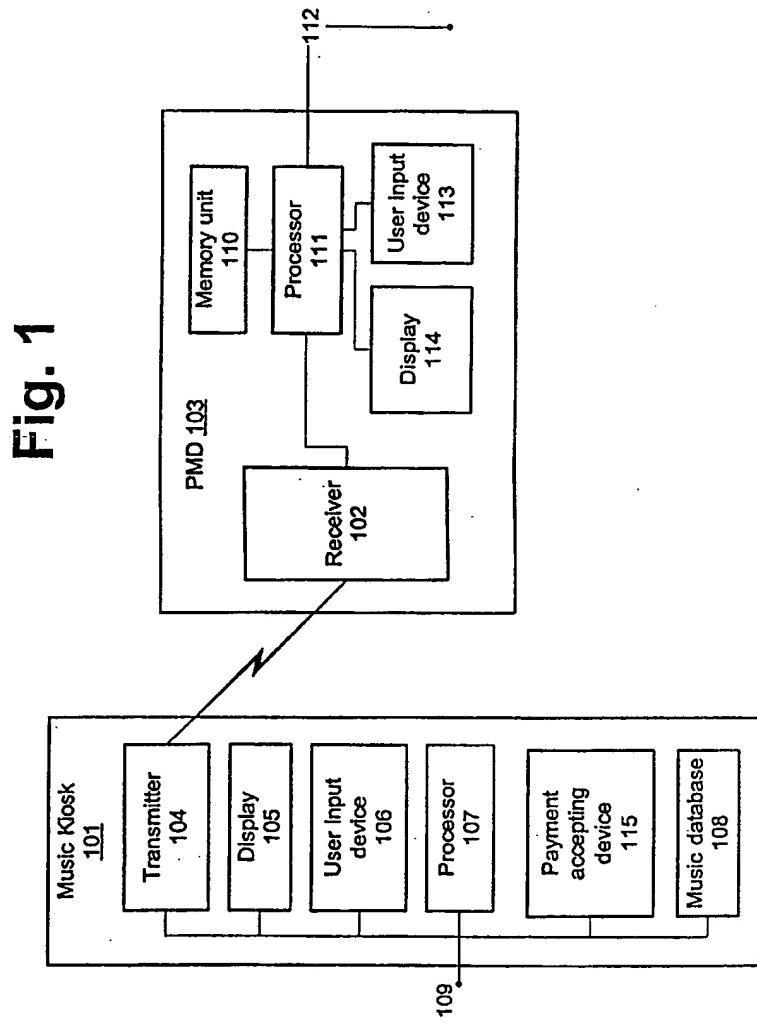
40

30 18. A kiosk as claimed in claim 13, further comprising an external connection (109) through which music recordings can be remotely added to or deleted from said database (108).

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35 19. A kiosk as claimed in claim 13, wherein said at least one kiosk (101) comprises a plurality of kiosks.

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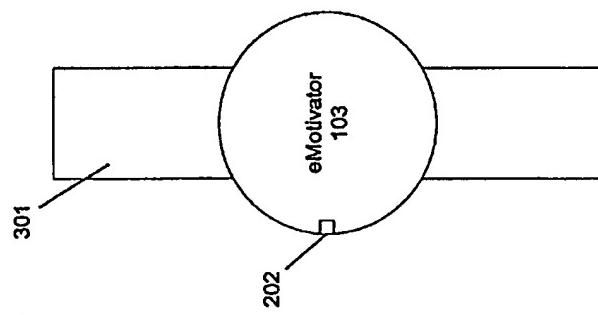


Fig. 3

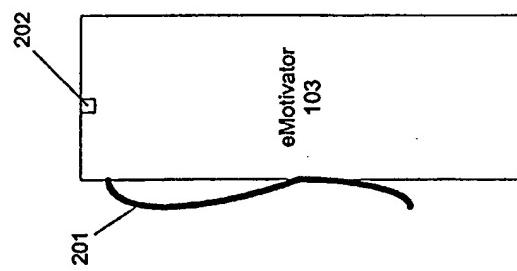


Fig. 2

# INTERNATIONAL SEARCH REPORT

Int'l Application No  
PCT/US 99/20789

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 G11C7/16 G07F17/30		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 H04H G07F G11C		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 817 139 A (SUN MICROSYSTEMS INC) 7 January 1998 (1998-01-07) column 4, line 47 -column 5, line 5	6-8
Y	column 6, line 1 - line 20	9,10, 13-19
A	column 6, line 57 -column 7, line 16 column 7, line 40 -column 8, line 34 figures 1,4,7,11	1-3,5, 11,12
Y	FR 2 560 059 A (TAKARA CO LTD) 30 August 1985 (1985-08-30) page 2, line 1 -page 3, line 7 figure 2	9
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.		<input checked="" type="checkbox"/> Patent family members are listed in annex
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